

Quantum motor and future

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In a popular language, the possibilities of the Casimir expulsion effect are presented, which can be the basis of quantum motors. Such motors can be in the form of a special multilayer thin film with periodic and complex nanosized structures. Quantum motors of the type of the Casimir platforms can be the base of transportation, energy and many other systems in the future.

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Well, the epoch of wheels and roads, petrol and rocket engines and other things that seem to be promising like thermonuclear reactor, is coming to its end... Recently, the possibility of the construction of propulsive systems based on the quantum effect of Casimir expulsion has been shown theoretically. More detailed information about the effect can be found in papers published in the electronic archives [1–3]. And it is not something supernatural or unreal; it is something that can be realized in the nearest future. Let us briefly note that if periodic structures based on Casimir expulsion are made from almost ideally conducting metals (such as gold and platinum) and for the ideal conditions, one layer of such structures with the area 6 – 8 square meters could lift Cheops pyramid (6.25 million tons)! And not just lift it but it could set it in motion and push it to the ends of the Universe at the light speed if we wish. It is clear that much more serious and universal quantum effect than levitation (i.e. keeping one body over the other) or any abstract antigravitation (gravitation repulsion so much talked about) is at issue.

Specifying the notion of expulsion we should note that it is associated with a constant moving force in contrast to repulsion (levitation effects) and it does not require the presence of a partner body. It needs only the presence of a material medium in which such effect occurs in a configuration. Expulsive forces also include the buoyancy force which is the result of the action of a gravitational field in a medium. This force acts upon closed cavities in a material medium causing their movement in the direction opposite to that of the gravitational field vector to the boundary where gravitational and buoyancy forces get balanced. Unlike buoyancy, the Casimir expulsion can act in a space directionally and constantly upon open cavities because the boundaries of a vacuum medium are specified by the cavity configuration itself. A particular case of such configurations is Casimir parallel mirrors [4–8] which do not possess an effective expulsion force [1–3]. The uniformity of the action of such forces upon the configuration can surely be changed at gradual or abrupt change of the parameters of the material medium.

In reality, most likely due to the existence of various unexpected obstructive physical factors, multilayered

structures (10 – 100 layers) will be needed. However, if we take into consideration that one layer of quantum structures will not be thicker than 10 angstroms, a multilayered pie of structures designed for lifting Cheops pyramid and its flight in the Universe will not exceed 10 – 100 nanometers. It is 10 000 times smaller than the diameter of a human hair! Not too much for the flight of the pyramid. And for the flight of a man, a layer of the structures with the area less than 10 square millimeters will be required with regard for possible corrections for roughness of internal elements of the structures and other possible problems! For providing 7 billion inhabitants of the Earth with the possibility of flying, in general less than 10 – 100 kilograms of gold will be necessary!!! By the way, aluminum can be used as well... Without going into the specific constructive peculiarities of making such structures, let us envisage spheres of their use and grand perspectives in the future that will be opened to the humanity:

1. Transport
2. Energy
3. Medicine
4. Astronautics
5. Robot technologies
6. Home appliances
7. Construction and Architecture
8. Food replication
9. World ecology
10. Life safety systems
11. Life philosophy

1. Transport

Panels with quantum Casimir effect of **expulsion** can be the basis of propulsive forces of all transportation platforms. Panels can be arbitrarily powerful and compact. In this sphere, there is a great field for creativity for

inventors. Transport facilities can be of any size and lifting capacity. Nowadays, car frames, wheels and engines make up about 70 – 90% of the vehicle weight. They will become unnecessary. It is possible to make individual transportation capsules capable of “hovering” over the ground at any height and in any direction needed. The need for roads with hard asphalt surface or any other surface between cities and settlements will disappear. It means that roads can be forgotten forever. Released lands will be reclaimed and turned into lawns and fields. In cities, the noise of transport will disappear. The air will become clean. Production of oil, gas and other mineral products used for the creation and operation of modern means of transport will become unnecessary. The negative influence of the human activity on the environment will be minimized.

2. Energy

The production of electricity required for the operation of electric apparatus and electronics will be realized on the basis of the Casimir expulsion effect. The electricity production will take place directly where electric and electronic devices are set. Devices will be compact enough and powerful. The necessity for the expensive means of electricity supply such as high- and low-tension power lines will disappear.

Humanity will have no need for powerful electricity generating stations, such as atomic power stations, thermal power stations, water power stations, tidal power stations, solar power plants, wind power stations, etc. The development of hydrogen power engineering and everything associated with it will become pointless. It will become unnecessary to develop and construct thermonuclear power plants. Consequently, it will be unnecessary to make electric generators and other equipment for these power plants. The need for providing such object with expensive security systems will disappear as well.

The closure of all types of power plants and stations, especially atomic ones, can remarkably improve the planet ecology. It will lead to the complete cessation of the destructive action of the waste of the commercial-scale power production on the nature. People working in the sphere of energy production will be able to use their knowledge and experience in other industries, for example, such as nano-production corporations or the expansion of humanity into the space.

3. Medicine

There are innumerable possibilities for the application of the Casimir expulsion effect in medicine. Since the devices for the energy transportation and generation on the basis of the effect can be arbitrarily small, there will be the possibility of the creation, for example, of a super-compact artificial **heart** continuously operating without batteries and wires, robotic nano-devices for **cleaning** and restoration of blood vessels and organs, for balancing blood **sugar** and “hunting” for **malignant** cells. The effect can be used for creating donor organs.

Special nanorobots will make large-scale surgical operations, for example, on the elimination of acquired or inherited defects in organs. The Casimir expulsion will be used in stomatology. For example, dental prostheses levitating near gums will be created. For positioning dental prostheses, magnetic marks implanted into a gum will be used. The firmness of the adjacency of dental prostheses to gums will be regulated automatically depending on the task performed by them at the particular moment. Traumatic technologies of fixing artificial teeth in jawbones will become things of the past.

4. Astronautics

There is the possibility to create multilayered structures on the basis of the Casimir expulsion having **arbitrarily large total thrust**. The structures will have small weight, many times smaller than the lifted weight of the sheath and content of space vehicles. There is no need to mention that the systems will be repeatedly used; they are reusable on default. It is possible **to create spacecrafts weighing millions of tons** with arbitrarily powerful protection against asteroids and other dangers.

Highest possible speed of motors on the basis of the expulsion effect can be the velocity of light. Such motors will not have disadvantages which are inherent in motors used nowadays. For example, the lift of the apparatus from any unequipped place will be possible. Even motors on the basis of photon radiations seem archaic, senseless and unreal. The expansion of the humanity into the boundless space is possible only with the use of motors based on the Casimir expulsion. Naturally, visiting various cosmic objects and settling on neighboring planets will be possible in the nearest future (much sooner than it is being planned by modern cosmic agencies).

Let us consider the hypothetical possibility of visiting the Earth by aliens. In principle, it could be possible only with the use of motors based on the Casimir expulsion. Since the effect provides infinite energy and perfect maneuvering capabilities, it is doubtful that aliens' spacecrafts could have any wrecks on the Earth. And if anything had taken place due to any strange concurrence of circumstances, **some** of such apparatus or their parts would have perpetually “drifted” or hung like mountains over the Earth. We do not observe such phenomena. Consequently, it can be stated with 100% probability that the Earth has not been visited by aliens during the entire history of its existence and they are not visiting the Earth nowadays.

5. Robot technologies

In the future, robots will be different from those described in scientific fictions and demonstrated in movies. Let us say, science-fiction writers are not quite strong visionaries! The use of Casimir platforms most likely deprives robots of anthropomorphous features such as “hands”, “legs” and even “body”. Moreover, robots will not need to recharge. It means that for perform-

ing a certain mechanical function, a robot will have only platforms-**grippers** which will not be necessarily bounded mechanically with one another. As for the other parts of the “body”, such robot will not have them in principal.

6. Home appliances

Any home appliances and furniture will undergo certain changes. Each domestic device such as a refrigerator, vacuum-cleaner or computer will be equipped by an individual compact energy source on the basis of the Casimir effect of expulsion. Therefore, the devices will become wireless and operate silently. New universal appliances will appear such as regenerators of life support. They are devices which will regenerate air and water. Actually, it will be possible to live in any place of the space using such devices. That is, they are modules based on endless energy which will provide the humanity expansion in the Universe.

Furniture can be placed on platforms and pieces of furniture will become much lighter and more mobile. In fact they can be compact enough to be carried during walking tours.

Clothes and footwear will be modernized. Inserts with thin and flexible layers of Casimir platforms can be sewn in clothes. As the result, a human being or a domestic animal can gain transport possibilities of flying quality. Thus, putting on special socks, a person will be able to walk on the water surface. And putting on trousers and mittens one can learn to fly artfully in the atmosphere. In this case, everything will be provided that the flyer would never fall on the ground. A human being will gain fantastic possibilities for tourism and travels without additional flying vehicles and will be able to travel individually, with his or her family or with a group of people. Having special spacesuits it will be possible to fly individually or with a group to the space, the Moon and neighboring planets.

7. Construction and Architecture

Since platforms based on the effect of vacuum expulsion can make buildings fly, heavy foundations and massive supporting structures will become unnecessary. The walls of buildings will be thin even in the areas with cold climate, because compact and inexpensive energy sources will appear, which will not burn oxygen. Each storey of a building will be easily dragged to any other group of buildings in a town or settlement. In fact, even lift cranes will become unnecessary because building storeys after they have been built will be able to occupy their positions at any height and any place. Reinforced concrete constructions will become unnecessary and reinforced concrete construction- and brick-making plants will be closed. Thus, buildings can be higher than clouds if there is such a need. Naturally, all buildings will be quakeproof. Wind and other loads will be damped automatically by side platforms. As it has been already mentioned, transport constrictions such as bridges will

lose their practical meaning.

In connection with radical changes in the concept of construction, **architecture** will also change. Buildings will not be permanently located in a district. They will be capable of turning after the Sun and receiving sufficient amount of light rays. It will be possible not to take into account any wind loads. Water supply and sewage for each flat or building in general can be built into the cycle with the devices for regeneration of these resources. Each device will have wireless individual electricity supply. Such possibilities will urge the imagination of architects to original creative solutions, because strength and other limits will not influence them in their search of forms.

8. Food replication

Only the appearance of nanorobots moving and operating on the basis of vacuum forces of expulsion will make possible to create devices for the integration of food at the molecular level according to the program – fruits, vegetables, eggs, meat, etc., and dishes based on them. They will be the so-called replicators - the embodiment of magic tablecloths. Millions of little nanorobots will be occupied with constructing and assembling molecules strictly according to the program for creating a certain product. The replica of such a product will not differ from its natural mate in anything. Since the energy of such vacuum platforms is endless, it will be possible to produce an infinitely large amount and variety of products.

9. World ecology

The discovery of the effect of vacuum expulsion and its use will lead to a radically new jump in the development of the humanity. This development will be based on a much less use of the resources of the Earth. Industrial discharge of carbon dioxide into the Earth atmosphere will practically stop. The contamination of the Earth with nuclear waste will cease. Large territories will become free from highways and railways. Oil spill in seas and oceans will stop. In cities, noise pollution will decrease many times. Due to the cessation of the operation of hydropower plants and their dismantling, water bodies and rivers on the continents will return into their virgin state. All the above will improve the ecology of the world.

10. Life safety systems

The use of the quantum effect of vacuum expulsion will make life of people safer. It will happen due to the improvement of the Earth ecology, the change of the entire infrastructure of life, the cancelling out of the content of military conflicts, because of the seismic and other safety of dwelling on the platforms of expulsion, the possibility of the deconcentration of dwelling houses over the planet territories.

Possible global cataclysms can be easily prevented. For example, trajectories of asteroids can be easily changed. Asteroids will be covered with platforms with the effect

of vacuum expulsion and will be dragged to safe orbits. Moreover, all massive asteroids in the Solar System will be “caught” by special “trawls” and removed beyond the System with the help of the vacuum platforms. Systems on the basis of our platforms will “hang” over each volcano and utilize ash and gases during volcanic eruption. In the oceans there will be platforms warming up or if necessary directing global water streams in the desired direction to create salubrious climate on the planet.

11. Life philosophy

It looks like the humanity has stayed too long at the start. Countries and people on the Earth resemble beetles in a matchbox. In the matchbox, the pressure grows because there is no exit. Dissipative social processes develop into the struggle for a “place in the Sun”. At best, the psychic energy of people is utilized and sublimated in sport and tourism; however, in the routine case, it is directed to leading a dissipative life, drug addiction and alcoholism. The possibilities of earthmen to show their worth in the space exploration are strongly limited. The creation of the apparatus for the expansion in the Universe will blow up the “life in the matchbox” and, finally, give a chance for each person to show his worth. A

“place for a deed” will appear. Now people will be able to switch from the struggle for a place in the Sun over to the exploration of systems of stars.

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